S/147/59/000/04/020/020
E031/E413

AUTHOR: Zolotukhin, V.K.

TITLE: The Scientific-Technical Conference at Khar'kov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 161-165 (USSR)

ABSTRACT: In May 1959, the 16th Conference of Professorial and Teaching Staff took place.

Strength of Aircraft Section.

"On the Theory of Bending of Thin-Walled Columns" by Docent, Candidate of Technical Sciences L.P.Vinokurov; "The Simulation of Static Experiments on Thin-Walled

Card 5/11

Structures" by Candidate of Technical Sciences L.A.Kolesnikov and Senior Instructor V.K.Zolotukhin; "The Bending of Beams Framing an Opening" by Candidate of Technical Sciences L.A.Kolesnikov; "The Influence of the Rigidity of Ribs and Beams on their Bending" by Assistant N.A.Shelomov; "The Calculation of the Bending of Rectangular Plates by the Discrete Method" by Assistant Yu.P.Petrov; "The Calculation of Cylindrical Shells" by the Method of Discrete Variables" by Aspirant N.I.Gur'yev.

Engine Construction Technology Section.

"The Choice of a Scheme for a Hydraulic Servo-System for the Automation of Welding Processes" by Assistant V.V.Balatskiy; "An Investigation of the Process of Polishing by an Abrasive Belt" by Senior Instructor, Candidate of Technical Sciences V.N.Verezub; "The Investigation of the Operation of a Pneumatic-Hydraulic Plant" by Assistant V.I.Bestoyev;

Card 6/11

"A Static Analysis and Calculation of the Accuracy of the Technological Processes of Machining" by O.M.Parkhomenko; "The Automatic Welding of Long Panels" by Candidate of Technical Sciences L.F.Kenskov; "Prospects in the Use of Specialized Computers for the Determination of the Optimum Geometry of Cutting Tools" by Docent, Candidate of Technical Sciences V.P.Kocharnovskiy; "The Spreading of the Experience of Innovators and the Classification of Organizational-Technical Measures in Machine Construction" by Senior Instructor M.M.Aponovich; "Features of Measurable Abrasion of a Cutting Tool in Fine Sharpening" by Assistant V.N.Malikov; "An Investigation of the Process of Compression at High Velocities of Deformation" by Docent, Candidate of Technical Sciences A.K.Bayer; "The Standardization of Vibration Effects on the Human Organism in Aircraft Production" by Senior Instructor Y.D.Ivanov.

Theory and Construction of Aircraft Engines and Propeller-Driven Machines Section. "The Investigation

Card 7/11

of the Flow Between the Inlet and Outlet Valves of a Turbine" by Instructor, Candidate of Technical Sciences V.N.Yershov; "The Variation in the Stage Parameters of an Axial Compressor in Accordance with the Size of the Radial Clearance" by Assistant A.N.Anyutin; "On the Problem of Non-Stationary Heat Transfer" by Assistant S.D.Frolov; "The Influence of an Electric Field on the Flame of a Burner" by Senior Engineer P.P.Kostenko; "Calculation of the Temperature Compensation of Capacitance Pressure Pick-Ups" by Assistant L.Ya.Astaf'yev.

Aerohydrodynamics Section.

"Ideal Hypersonic Flow Round a Body" by Assistant V.I.Kholyavko; "The Control of the Boundary Layer of a Wing by Perforation of the Leading Edge" by Assistant Ye.P.Yachmenev; "The Gas-Hydraulic Analogy and its Application" by Senior Instructor D.A.Munshtukov; "The Aerodynamic Investigation of Wing Profiles for Small Reynolds Numbers" by Engineer Yu.F.Usik.

28(5) SOV/32-25-9-27/53

AUTHORS: Novikov, G. I., Suvorov, A. V., Bayev, A. K.

TITLE: Method of Determining the Pressure of the Saturated Vapor of Difficultly Volatile Substances

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 9, pp 1097-1099 (USSR)

ABSTRACT: A method was developed by which the sample is vaporized in an inert gas in a closed vessel, the inert gas acting as elastic medium which transfers the vapor pressure to a pressure gauge outside the high-temperature range. From the scheme of the gauge (Fig 2) it may be seen that the substance to be investigated evaporates in a cylindrical quartz vessel which is housed in a furnace and is connected to a diaphragm zero-pressure gauge by means of a tube. The latter is contained in a thermostat and transmits the pressure to the pressure gauge which permits measurements with an accuracy of ± 0.5 torr. From the measurement results obtained on the apparatus described the pressure of the saturated vapor of KCl was computed, and a curve of the dependence of the vapor pressure on temperature was plotted (Fig 3). Comparison with the corresponding values in Stell's table shows good agreement of the data. There are 3 figures.

Card 1/2

SOV/32-25-9-27/53

Method of Determining the Pressure of the Saturated Vapor of Difficultly Volatile Substances

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Card 2/2

BAYEV, A.K.

S/078/60/005/008/002/018
B004/B052

AUTHORS: Shchukarev, S. A., Novikov, G. I., Vasil'kova, I. V., Suvorov, A. V., Andreyeva, N. V., Sharupin, B. N., Bayev, A. K.

TITLE: The Thermodynamic Properties of Chlorides and Oxychlorides of Tungsten and Molybdenum

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 8, pp. 1650-1654

TEXT: By applying various methods, the authors wanted to check the formation heats, formation entropies, and formation enthalpies in the case of Mo- and W chlorides, published in western papers (Refs. 1, 2). They investigated: WCl_6, $MoCl_5$, $WOCl_4$, $MoCl_4$, WO_2Cl_2 (obtained by a successive chlorination of WO_3 and MoO_3 by means of CCl_4) MoO_2Cl_2 (obtained by the reaction between MoO_2 and Cl_2); $MoCl_3$, WCl_4, WCl_5 (by the reduction of $MoCl_5$ and WCl_6 by means of H_2), and $MoCl_2$, WCl_2 (obtained by dispropor-

tion of $MoCl_3$ and WCl_4, and $MoOCl_4$). Two calorimetric methods were applied: 1) Comparison of the heat of solution of the investigated substance to the heat of solution of a substance whose heat of formation is known (Table 1). 2) Combustion in oxygen (Table 2). Furthermore, the vaporization, depolymerization, dissociation, and disproportionation processes taking place in a state of equilibrium, were spectrophotometrically and tensimetrically investigated (Tables 3, 4). The enthalpies of formation, and partly also the standard entropies of formation were calculated from the experimental data. In Tables 5 (Mo compounds) and 6 (W compounds) they are compared with the data given in Ref. 2 which were adopted almost unchanged by the US National Bureau of Standards (Ref. 9). The values determined by the authors are 1.4 - 1.7 times as high. Therefore, the dependence of the free energy of formation of temperature is different altogether. This is graphically represented in Fig. 1 (comparison of determined ΔH^0 and ΔF^0 for tungsten compounds, with the data of the National Bureau of Standards), and Fig. 2 (comparison of the ΔH_{form} of Cr, Mo, and W chlorides, with the data of the National Bureau of Standards). There are 2 figures, 6 tables, and 9 references: 6 Soviet, 2 US, and 1 Dutch.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet Khimicheskiy fakul'tet (Leningrad State University Department of Chemistry)

SUBMITTED: May 6, 1959

SHCHUKAREV, S.A.; NOVIKOV, G.I.; VASIL'KOVA, I.V.; SUVOROV, A.V.; ANDREYEVA, N.V.; SHARUPIN, B.N.; BAYEV, A.K.

Thermodynamic properties of tungsten and molybdenum chlorides and oxychlorides. Zhur. neorg. khim. 5 no.8:1650-1654 Ag '60. (MIRA 13:9)

1. Leningradskiy gosudarstvennyy universitet, Khimicheskiy fakul'tet.
(Tungsten chloride) (Molybdenum chloride)

2953
S/078/61/006/011/013/013
B101/B147

5 1300

AUTHORS: Bayev, A. K., Novikov, G. I.

TITLE: Thermodynamic study of binary systems of some chlorides of alkali metals and rare earth elements

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 11, 1961, 2610-2611

TEXT: Binary systems of sodium or potassium chloride and La, Ce, Pr, Nd were thermographically studied. The components of the systems with NaCl were mutually soluble in the melt. For the systems with KCl the following data are given: Table 1

$LaCl_3$ - KCl	$CeCl_3$ - KCl	$PrCl_3$ - KCl	$NdCl_3$ - KCl
Temperatures and mole% content of KCl in the eutectics			
580°C 53 %	535°C 51 %	500°C 45 %	500°C 50 %
585°C 78 %	600°C 67 %	555°C 65 %	590°C 65 %
620°C 30 %	595°C 79 %	610°C 78 %	625°C 79 %
peritect.	548°C 42 %	620°C 67 %	
	peritect.	peritect.	

Card 1/3

$LaCl_3$ - KCl	$CeCl_3$ - KCl	$PrCl_3$ - KCl	$NdCl_3$ - KCl
	Regions of solid solutions		
none	two	three	three
	Double compounds and their melting points		
$KCl \cdot 3LaCl_3$	$KCl \cdot 3CeCl_3$	$3KCl \cdot 2PrCl_3$	$KCl \cdot 2NdCl_3$
620°C incongruent	548°C incongr.	615°C congr.	615°C congr.
$2KCl \cdot LaCl_3$	$3KCl \cdot 2CeCl_3$	$2KCl \cdot PrCl_3$	$3KCl \cdot NdCl_3$
645°C congruent	625°C congr.	620°C incongr.	630°C congr.
	$3KCl \cdot CeCl_3$	$3KCl \cdot PdCl_3$	
	640°C congr.	675°C congr.	

These data differ somewhat from those published so far. The heat of formation of double compounds was calculated from the difference between the heat of formation of the mechanical mixture of initial salts and that of their compounds. The equilibrium of the vapor hydrolysis of pure $LaCl_3$, $CeCl_3$, $PrCl_3$, and $NdCl_3$ and their KCl compounds was calculated by means of

Card 2/3

35352
S/054/62/000/001/011/011
B121/B138

S.430

AUTHORS: Novikov, G. I., Bayev, A. K.

TITLE: Vapor hydrolysis of K double chlorides and rare earths (La, Ce, Pr, Nd)

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 1, 1962, 154-160

TEXT: The equilibrium was studied by the following equations:

(1) $[LnCl_3]_{solid} + (H_2O)_{gas} \rightleftarrows [LnOCl]_{solid} + (2HCl)_{gas} + \Delta F_1^o$

(2) $\frac{1}{y}(xKCl \cdot yLnCl_3)_{solid} + (H_2O)_{gas} \rightleftarrows \frac{x}{y}(KCl)_{solid} + (LnOCl)_{solid} + (2HCl)_{gas} + \Delta F_2^o$.

The thermodynamic characteristics of the formation of double salts are determined from the difference between these reactions:

(3) $\frac{x}{y}(KCl)_{solid} + (LnCl_3)_{solid} = \frac{1}{y}(xKCl \cdot yLnCl_3)_{solid}$ $\Delta F_1^o - \Delta F_2^o = \Delta F_{formation}^o$

Card 1/3

S/054/62/000/001/011/011
B121/B138

Vapor hydrolysis of K double ...

The examination was conducted by the static method with a diaphragm zero gage. The enthalpy of formation of 2KCl, $LaCl_3$, $3KCl \cdot 2CeCl_3$, $3KCl \cdot CeCl_3$, $3KCl \cdot 2PrCl_3$, $3KCl \cdot PrCl_3$, $3KCl \cdot 2NdCl_3$, and $3KCl \cdot NdCl_3$ was calculated from experimental data by the equation

$$\Delta S^{o}_{formation} = \frac{\Delta H_{formation}}{T} + 4.575 \left(\log K_T^{I} - \log K_T^{II}\right).$$

Pure chlorides of rare earths were produced by chlorinating their oxides with $CCl_4 + Cl_2$ at 600-700°C. They were distilled in a vacuum to remove oxychloride traces. K double salts of rare earths were produced by fusing stoichiometric amounts of rare earth chlorides and K chloride at 700°C in evacuated quartz ampoules. The equilibrium of water vapor hydrolysis was determined in a quartz apparatus with a diaphragm zero gage. The temperature was measured with a platinum-rhodium thermocouple and kept constant with a ЭПВ-01 (EPV-01) thermoregulator accurate to 0.5°C. The atmospheric pressure in the apparatus was measured with a gage accurate to 0.1 mm Hg. The more rare earth chlorides are contained in the double salts, the deeper the vapor hydrolysis at the corresponding temperatures. The formation

Card 2/4

S/078/62/007/006/009/024
B106/B180

AUTHORS: Novikov, G. I., Bayev, A. K.

TITLE: Saturation vapor pressures of the chlorides of trivalent lanthanum, cerium, praseodymium, and neodymium

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 6, 1962, 1349-1352

TEXT: The discrepancies in the published data on the heats of evaporation of La, Ce, Pr, and Nd chlorides are mainly due to the inadequate saturation vapor pressure figures, especially at $>$ 1 mm Hg. For this reason, the saturation vapor pressures of anhydrous $LaCl_3$, $CeCl_3$, $PrCl_3$, and $NdCl_3$ were determined by an isothermal version of the "boiling-point method" (G. I. Novikov, O. G. Polyachenok, Zh. neorgan. khimii, 6, 1951 (1961)). It is suitable for measuring the vapor pressure of liquid and solid substances from 1 mm Hg to atmospheric pressure and above. Error is $< \pm$ 0.1 mm Hg. The moment at which the vapor pressure above the substance becomes equal to the external pressure is established by the drop in the temperature of the substance when evaporation is intensified near boiling point. The temperature ranges were 1124-1220°C for $LaCl_3$,

Card 1/4

Saturation vapor pressures of the ...

SUBMITTED: March 6, 1961

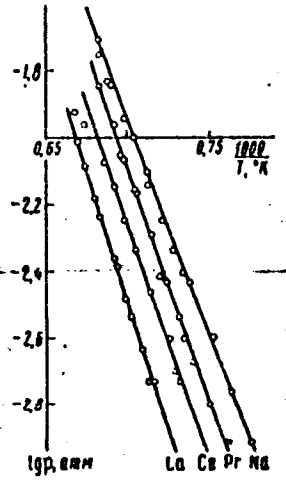

Fig. 3. Temperature dependence of saturation vapor pressures of chlorides of La, Ce, Pr, and Nd. Legend: x-axis - log p, atm.

Card 3/4 3

S/078/62/007/006/010/024
B106/B180

AUTHORS: Novikov, G. I., Bayev, A. K.

TITLE: Pressure and composition of saturated vapor above melts in the systems $LnCl_3$-KCl (Ln = La, Ce, Pr, Nd)

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 6, 1962, 1353-1359

TEXT: The total vapor pressure above melts of the systems $LnCl_3$-KCl (Ln = La, Ce, Pr, Nd) was studied in the temperature range 900-1200°C using an existing modification of the "boiling point method" (sensitivity 0.1 mm Hg) for determining vapor pressures of low-volatility substances (G. I. Novikov, O. G. Polyachenok, Zh. neorgan. khimii, 6, 1951 (1961)). In the resulting diagrams (log p_{total}; 1000/T, °K) the lines of the total saturation vapor pressure for melts of different compositions lie between those of the pure components KCl and $LnCl_3$. Their order agrees with the changes in concentration of the melts. There is non-monotonic variation in the rise of the vapor pressure line when passing from pure

Card 1/3

Pressure and composition of ...

$LnCl_3$ salts to mixtures containing ever more KCl. This may be due to dissociation of the compounds in the melt as the temperature rises. The systems studied deviate considerably from ideal mixtures, in a way which indicates considerable association in the salt melts. With the analytical method used chemical analysis of the condensates is possible. The sum of the analytically determined elements was in good agreement with the results of direct weighing of the condensates. Comparison of the vapor compositions with the corresponding compositions of melts showed that the vapor contained far more $LnCl_3$ than could be expected if only KCl and $LnCl_3$ are mutually soluble without the formation of double salts or their evaporation on heating. Plots of vapor versus melt composition show that some form of the double salts between KCl and $LnCl_3$ must be volatile.

The rare earth content of the vapor decreases with rising temperature, which may be due to dissociation of the volatile forms of the compounds in the melt. There are 9 figures and 10 tables.

Card 2/3

NOVIKOV, G.I.; BAYEV, A.K.

Vapor hydrolysis of double chlorides of potassium and rare earth elements. (La,Ce,Pr,Nd). Vest.LGU 17 no.4:154-160 '62. (MIRA 15:3)
(Rare earth chlorides)(Hydrolysis)

33933
S/079/62/032/001/010/016
D204/D302

5.2300 (1273)

AUTHORS: Novikov, G.I., and Bayev, A.K.

TITLE: Saturated vapor pressures of liquid chlorides of certain lanthanons and over the systems MCl_3-KCl where M = La, Ce, Pr, Nd

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 1, 1962, 315-316

TEXT: The vapor pressures were measured by a variation of the familiar 'dew-point' method, over molten $LaCl_3$, $CeCl_3$, $PrCl_3$ and $NdCl_3$ at 1124-1220°, 1093-1224°, 1041-1192° and 962-1194°C respectively. Dependence of the pressure on temperature was of the usual form $\ln P = f(1000/T°K)$ and $\Delta H_{evap.}$ and $\Delta S_{evap.}$ have been determined [Abstractor's note: ΔH and ΔS not defined but probably latent heat and entropy]. Boiling points of $LaCl_3$, $CeCl_3$, $PrCl_3$ and $NdCl_3$ were found to be 1570°, 1555°, 1554° and 1551°C, i.e. 100-

Card 1/2

NOVIKOV, G.I.; BAYEV, A.K.

Thermographic and calorimetric study of the systems $TRCl_3$ - MCl (TR = La, Ce, Pr, Nd; M = K, Na). Vest LGU 16 no.22:116-126 '61. (MIRA 14:11)

(Systems (Chemistry)) (Rare earth chlorides--Thermal properties)
(Alkali metal chlorides--Thermal properties)

NOVIKOV, G.I.; BAYEV, A.K.

Characteristics of the evaporation of rare earth chlorides in the systems KCl - $LnCl_3$ (La, Ce, Pr, Nd). Vest. LGU 17 no.16:89-97 '62. (MIRA 15:9)
(Rare earth chlorides) (Systems (Chemistry))

BAYEV, A.K., kand. tekhn. nauk

Measuring cutting forces on lathes and planing machines.
Mashinostroenie no.3:13-15 My-Je '63. (MIRA 16:7)

1. Khar'kovskiy aviatsionnyy institut.
(Metal cutting)

BAYEV, A.K.

Dynamometer for measuring the compression force of presses and hammers. Mashinostroenie no.3:23-24 My-Je '63.
(MIRA 16:7)

(Dynamometer)

NOVIKOV, G.I.; BAYEV, A.K.

Volatility of acidocomplex compounds in the systems $LnCl_3$ - KCl.
Zhur. neorg. khim. 9 no.7:1669-1675 Jl '64.
(MIRA 17:9)

BAYEV, A.K., [illegible]

Mechanized sharpening of cutting tools. Mashinostroenie no.3: 62-63 My-Je '65. (MIRA 18:6)

BAYEV, A.K.; NOVIKOV, G.I.

Thermodynamic study of rare-earth oxychlorides. Zhur.neorg.khim. 10 no.11:2457-2464 N '65. (MIRA 18:12)

1. Leningradskiy gosudarstvennyy universitet, khimicheskiy fakul'tet. Submitted May 12, 1964.

L 39093-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JW/JG

ACC NR: AP6021966 SOURCE CODE: UR/0153/66/009/002/0180/0184

AUTHOR: Novikov, G. I.; Bayev, A. K.

ORG: Inorganic Chemistry Department, Leningrad State University im. A. A. Zhdanov (Kafedra neorganicheskoy khimii, Leningradskiy gosudarstvennyy universitet)

TITLE: Thermodynamic characteristics of the reaction of rare earth chlorides with hydrogen and certain metals in the gaseous state

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 2, 1966, 180-184

TOPIC TAGS: free energy, rare earth chloride, alkali metal, alkaline earth metal, hydrogen

ABSTRACT: Published data on the thermodynamics of rare earth chlorides are used to examine their reactions with certain elements of groups I and II of the periodic system in the gaseous state. These reactions are:

$$(LnCl_3)_g \rightarrow [Ln]_l + 3/2(Cl_2)_g \quad (1)$$
$$3(M^I)_g + 3/2(Cl_2)_g \rightarrow 3(M^ICl)_g \quad (2)$$
$$3/2(M^{II})_g + 3/2(Cl_2)_g \rightarrow 3/2(M^{II}Cl_2)_g \quad (3).$$

ΔZ^0 at 1000 and 1900°K for (1), (2), and (3) was calculated for various rare earth elements. From these data, values of the free energy of the overall reaction

Card 1/2 UDC: 536.77:661.865

KRASNOV, Mikhail Leont'yevich; MAKARENKO, Grigoriy Ivanovich; BAYEV, A.P., red.

[Operational calculus. Stability of motion] Operatsionnoe ischislenie. Ustoichivost' dvizheniia. Moskva, Nauka, 1964. 102 p. (MIRA 17:12)

BAYEV, A. V.

USSR/Electricity - Rectifiers
Inverters

Nov 52

"Characteristics of Converter Installations," Cands Tech Sci A. V. Bayev, I. A. Krichenova, V. Ye. Polyakov, V. M. Sin'kov, and Engr V. Yu. Sro[illegible]kh, Ural Polytech Inst imeni Kirov

"Elektrichestvo" No 11, pp 51, 52

Cites procedure for constructing characteristic curves of converter (rectifier and inverter) installations using regulation angles alpha and beta as coordinates. Most important relationships from point of view of operation are obtained for case of infinite inductance in rectified current circuit.

Submitted 10.Apr 52.

240T66

BAYEV, A.V.

BAYEV,A.V., inzhener; GERMAN,A.L., inzhener; ZYKOV,S.I., tekhnik

Investigation and testing of Ural hydrostations equipped with horizontal turbines with runners of the P140 type. Nauch.trudy VIMSKH no.1:208-220 '54. (MLRA 8:11)

1. Sverdlovskiy filial Vsesoyuznogo Instituta elektrifikatsii sel'skogo khozyaystva
(Sverdlovsk Province--Hydraulic turbines)

AUTHORS: Bayev, A. V., Krichenova, I. V., Polyakov, V. Ye., Sin'kov, V. M., Srodnykh, V. Yu. 105-58-6-30/33

TITLE: On the Occasion of the 1o-th Anniversary of Putting Into Operation of the Test D.C. Line in the Town of Sverdlovsk (K 1o-letiyu so dnya puska eksperimental'noy linii postoyannogo toka v g. Sverdlovske)

PERIODICAL: Elektrichestvo, 1958, Nr 6, pp. 93-93 (USSR)

ABSTRACT: On February 1o, 1958 1o years had passed since the putting into operation of the first small experimental d.c. line in the USSR. It was constructed by the Ural Polytechnical Institute imeni S.M. Kirov and the "Uralelektroapparat" factory. Its power was 18o kW at 12 kV. The a.c. voltage at the rectifier and inverter substations was 6 kV. A number of scientific research works were performed in this test line; in 195o the line was demounted in connection with the new construction of the institute.

1. Transmission lines--USSR 2. Transmission lines--Equipment
3. Transmission lines--Performance

Card 1/1

8(6), 14(6) SOV/143-58-10-18/24

AUTHORS: Bayev, A.V., Candidate of Technical Sciences, Docent, Krichenova, I.A., Polyakov, V.Ye., Sin'kov, V.M., Srodnykh, V.Yu., Engineer

TITLE: The Experimental D.C. Power Line from UPI to UEA

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika, 1958, Nr 10, pp 144-145 (USSR)

ABSTRACT: On February 10, 1948, the construction of the first experimental d.c. power line in the USSR was completed, connecting the UPI - Ural'skiy politekhnicheskiy institut imeni S.M. Kirova (Ural Polytechnic Institute imeni S.M. Kirov) with UEA - "Uralelektroapparat" plant in Sverdlovsk. The preparations for building this d.c. line began in 1947 by an order signed by the directors of UPI and UEA. Planning, constructing, operating and research were carried out jointly by UPI and UEA. This power line may serve as an example for the cooperation between an industrial installation and a vuz. All planning was done by the authors of this article at Kafedra elektricheskikh stantsiy, setey

Card 1/5

The Experimental D.C. Power Line from UPI to UEA

i sistem UPI (Chair of Electric Power Plants, Networks and Distribution Systems of UPI) with consultation of loading employees of the mercury rectifier department of the UEA, L.M. Klyachkin, V.K. Krapivin, I.N. Faleyev. The basic and auxiliary equipment was furnished by UEA, while UPI provided materials for the line. The construction of the line was performed by the organization "Uralelektromontazh", L.M. Lipovetskiy and S.V. Khlynov, with participation of the Institute. The d.c. power line was prepared for operation by UIP (Khlebnikov, I.Ya., Senior Laboratory Assistant, and others) with participation of UEA representatives. The rectifier substation was set up at the 6 kv substation supplying the Vtuzgorodok (Institute area). For installing the inventors, free chambers in a substation feeding one of the training buildings were used, of which a part was occupied by UEA. The rectified voltage was 12 kv. The equipment of the rectifier and inverter stations was designed for transmitting 180 kw. The length of the overground line was

somewhat shorter than 500 m. In a special laboratory preliminary studies were conducted with the rectifier and inverter equipment, emphasizing safety measures, since a number of students did not yet have the required experience. The equipment was installed upon completion of the construction work by a group of 12-15 senior students. The experimental operation was also performed by students, among them B.A. Astakhov, P.N. Zakharov and his brother, Kokin, Teploukhov and others. The Ekspluatatsionno-tekhnicheskoye upravleniye UPI (Operational-Technological Administration of UPI), S.A. Yakimov, N.A. Morozov, M.A. Bobich and others, furnished great assistance for this project. The first period of operation of the d.c. power line was characterized by short duration of stable power transmission. After two to four hours various malfunctions of the six-anode mercury rectifiers occurred, etc. Some research work was conducted on a contract basis with the "Uralelektroapparat" plant and the Institut postoyannogo toka MES SSSR (Institute

and at the All-Union conference on mercury rectifiers held in Sverdlovsk in 1949. There are 3 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institute imeni S.M. Kirova (Ural Polytechnic Institute imeni S.M. Kirov) Chelyabinskiy politekhnicheskiy institut (Chelyabinsk Polytechnic Institute) Institut avtomatiki Gosplana USSR (Institute of Automation of Gosplan UkrSSR)

BAYEV, A.V., kand.tekhn.nauk, dotsent

Problem concerning the external characteristic of an inverter. Energ. sbor. no.2:119-128 '59. (MIRA 15:1)
(Electric current converters)

L 30504-67 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP7003100 SOURCE CODE: UR/0105/66/000/006/0023/0026

AUTHOR: Bayev, A. V.; Zykin, F. A.; Ushakov, I. M. 35 34

ORG: none

TITLE: Network simulator for computing the optimum operation of power systems 16

SOURCE: Elektrichestvo, no. 6, 1966, 23-26

TOPIC TAGS: computer design, electric network, electronic engineering

ABSTRACT: The article describes the principle and operation of a network model-computer designed and built at the Chelyabinsk Polytechnic Institute. This device simulates actually installed power networks and automatically determines the most economical use of equipment under whatever prevailing load conditions. The ultimate aim is to establish the minimum fuel cost and this leads to the solution of four series of equations involving: 1) derivatives of fuel cost with respect to load on the station, 2) derivatives of power losses in the network with respect to terminal station voltages and with respect to increments of regulated transformer voltages. The essential components of this device are: 1) automated electronic models of generator stations, 2) automated electronic models of system loads, 3) model of the electrical

Card 1/2 UDC: 621.142.33:621.311.153.001.24

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L 10264-67

ACC NR: AP7003100

power network, 4) automated electronic models of regulated transformers, 5) instrumentation for measuring total losses in the power network, 6) automatic scanning to find the most economical mode of system operation, 7) limiter units for voltages in the system network as well as for the load on generators and synchronous compensators, 8) a measurement panel. The process of computing the network and its operation is followed-up step by step and the usefulness of each of the simulator components is thereby precisely defined. The device described here makes it also possible to stabilize the optimum mode of system operation automatically and without interruption. Orig. art. has: 2 figures and 3 formulas. [JPRS: 37,479]

SUB CODE: 09 / SUBM DATE: 20Nov64 .

network planning 14

Card 2/2

Bayev, B

BULGARIA / General Problems of Pathology. Tumors. U
Comparative Oncology. Tumors of Man.

Abs Jour: Ref Zhur-Biol., No 22, 1958, 102716.

Author : Kurdzhiyev, B.; Sivchev, S.; Kurtsev, D.; Pelova, M.; Parov, B.; Dobrev, Ts.

Inst : Sofia Advanced Medical Institute.

Title : Carcinoma of the Lungs. Anatomical-Clinical Study of Material from the Pathological-Anatomical Institute.

Orig Pub: Nauchni tr. Vissh. med. in-t, Sofiya, Klinich. katedri, 1955 (1957), 3, No 1, 159-198.

Abstract: No abstract.

END

Card 1/1
91226

80

KARDZHIYEV,B., SIVCHEV, S., KRYSTEV, D., PELOVA, N., BAYEV,B., DOBREV, TS.

Clinical and anatomical characteristics of lung cancer. Arkh.pat. 18 no.3:58-61 '56 (MIRA 11:10)

1. Iz kafedry obshchey patologii i patologicheskoy anatomii (zav. - prof. B. Kardzhyev) i kafedry gospital'noy khirurgii (zav. prof. St.Dimitrov) Vysshego meditsinskogo instituta imeni Vulko Chervenkova.
(LUNGS, neoplasms
anat. aspects & statist. (Rus))

Bayev, B.F.

USSR/General Division. History. Classics. Personnel. A-2

Abs Jour: Ref. Zhur. Biologiia, No 4, 1958, 14135.

Author : Bayev B.F.
Inst :
Title : I.M. Sechenov on the Origin and Development of Thought.

Orig Pub: Nauk.-doslidn. in-t psikhol. URSR, 1956, 6, 149-154.

Abstract: No abstract.

Card : 1/1 -10-

BAYEV, B.F.

Academic session of the Institute of Psychology of the Ministry of Education of the Ukrainian S.S.R. Vop.psikhol. 4 no.3:181-187 My-Je '58 (MIRA 11:8)
(PSYCHOLOGY)

BAYEV, B.F.

Functional characteristics of internal speech as related to thinking activity [with summary in English]. Vop.psikhol. 4 no.6:108-118 N-D '58. (MIRA 12:1)

1. Institut psikhologii Ministerstva prosveshcheniya USSR, Kiyev.
(Speech) (Thought and thinking)

BAYEV, B.F. [Baiev, B.F.]

Role of internal speech in human thought. Nauk. zap. Nauk.-dosl. inst. psykhol. 11:65-68 '59. (MIRA 13:11)

1. Institut psikhologii, Kiyev.
(Thought and thinking)

BAYKV, B.F. (Kiyev)

Ukrainian conference on psychological problems in training and education. Vop.psikhol. 7 no.3:181-187 My-Je '61. (MIRA 14:6)
(Educational psychology)

L 13825-66 EWT(d)/FS(m)/EWT(l)/EWP(m)/EWT(m)/EWP(w)/T-2/EWP(k) EM

ACC NR: AP6030424 SOURCE CODE: UR/0420/66/000/006/0009/0013

AUTHOR: Bayev, B. S.

ORG: none

TITLE: On the possibility of retaining the center-of-pressure position on a thin airfoil when deflecting its trailing-edge portion

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 6, 1966, 9-13

TOPIC TAGS: thin airfoil, airfoil pressure center, slat effect, flap effect, AIRFOIL CHARACTERISTIC, AIRFOIL TEST, ANGLE OF ATTACK

ABSTRACT: The aerodynamic characteristics C_y and C_m (coefficients of lift and moment, respectively) of a thin airfoil (with a deflectable portion at the trailing edge) in a plane steady flow of a perfect incompressible fluid at an angle of attack are determined by using a vortex system of the thin-airfoil theory. It is assumed that the equation of the mean line of the airfoil profile is known. The position of the center of pressure on the chord is determined as the C_m/C_y ratio, and the condition is derived under which this ratio does not change with increasing angle of deflection of the rear portion of the airfoil under constant angle of attack. The application of the theoretical results thus obtained to a real wing equipped with a slat (represented in the theoretical model by a point vortex in the front) and a flap (represented by the deflectable rear part of the airfoil) is mentioned, and the effect of the slat

Card 1/2

BAYEV,B.V.; VOROTNIKOV,P.Ye; GOKHBERG,B.M.; SIDOROV,N.I.; SHUP,A.V.; YAN'KOV,G.B.

High-voltage electrostatic generator in compressed gas. Dokl. AN SSSR 101 no.4:637-639 Ap '55. (MLRA 8:7)

1. Institut fizicheskikh problem im. S.I.Vavilova Akademii nauk SSSR. Predstavleno akademikom A.P.Aleksandrovym.
(Electrostatics) (Particle accelerators)

BAYEV, F. K.

10
9
8

Polarographic determination of lead, tin, and cadmium present together in metallic zinc and zinc solutions. F. K. Bayev and P. N. Kovalenko (V. M. Molotov State Univ., Rostov). *Zavodskaya Lab.* 21, 1170-2(1955).—A method of polarographic detn. of Pb, Sn, and Cd in solns. contg. an excess (Zn:Sn = 100:0.0025) is based on the fact that in HCl solns. the diffusional current h is that of Pb + Sn^{4+}, h_1, and in HCl + citric acid h of Sn^{4+} is suppressed and that of Pb, h_2, and Cd, h_3, are obtained. The procedure is as follows: Place 10 ml. of concd. HCl in 5 flasks; add 2 ml. of 25% K citrate to flasks 4 and 5; to all flasks add 1/5 (20 ml.) of the Zn soln.; add standard solns. contg. a_2 mg. of Pb to flask 2, a_1 mg. of Sn ($SnCl_4$) to flask 3, and a_3 mg. of Cd with a_2 to flask 5. Solns. 4 and 5 are made neutral to methyl orange with NaOH and all solns. are dild. to 50 ml. The percentage values are given by: Sn = $[(h_1 - Kh_2)a_1A]/(h_2 - h_1)$, Pb = $(h_2a_1A)/(h_2 - h_1)$, and Cd = $(h_3'a_3A)/(h_3' - h_2')$. $K = \Delta h_1/\Delta h_2 = (h_3 - h_1)/(h_2 - h_1)$; $A = (5/100)(m/1000)$ where m is the wt. of Zn; h_2 and h_3' are the values of h of Pb and Cd without standards (soln. 4) and h_2 and h_3' with standards (soln. 5). The sensitivity of the method, in mg./l., is Pb 5, Cd 5, and Sn 4. T. B.

BAYEV, F.K.

Polarographic determination of thallium in metallic zinc and its salts in the presence of tin. Soob.o nauch.rab.chl.VKHO no.1:18-21 '55. (MIRA 10:10)

(Polarography) (Thallium) (Zinc)

BAYEV, F.K.

USSR/ Analytical Chemistry - General Questions G-1

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12003

Author : Bayev F.K., Kovalenko P.R.
Inst : Commission on Analytical Chemistry of the Academy of Sciences USSR
Title : Use of a Masking of Ions in Conjoint Polarographic Determination of Elements Having Coinciding Reduction Potentials

Orig Pub : Tr. Komis. po analit. khimii. AN SSSR, 1956, 7(10), 119-135

Abstract : Considered is the question concerning the possibility of conjoint polarographic determination of elements having coinciding reduction potentials, from the standpoint of enhanced specificity by means of masking of one of the ions being reduced. Use is made of masking of the Sn(4+) ion, for the purpose of direct polarographic determination of the latter and of Pb on their conjoint presence in

Card 1/2 Rostovskiy-na-Donu - gosudarstvennyy univ. im. V.M. Molotov.

BAYEV, F.K.

AUTHORS: Bayev, F.K., Frenkel', R.I., Storozhenko, Z.I. 32-12-11/71

TITLE: The Determination of Thiosulphate and Rhodanide in the Troughs for the Thermal Sulfonation of Metals (Opredeleniye tiosul'fatov i rodanidov v vannakh dlya termicheskogo sul'fidirovaniya metallov).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1428-1429 (USSR)

ABSTRACT: In the process of the thermal sulfonation of iron metals sulphides, half-sulphides, sulphates, and a small quantity of sulphur are formed and accumulate in the troughs. For the determination of the thiosulphide content (in the USSR) iodometrical methods are employed. With respect to the determination of rhodanide an experiment was described by this paper, in which the application of the bromine-iodometric method according to Shulek (Ref. 3 is said to give too low results. The method consists in previous oxidation of CNS- into bromine cyanogen, the decay of which by potassium iodide and following titration of the separated iodine by the thiosulphate solution after the forming of a compound between the free (excess) bromine with phenol. Because of the statement made in publications (Ref.4 that in this case results should be too low, it is stated here that this is the case only if the titer of the sodium thiosulphate

Card 1/2

solution is iodometrically adjusted with respect to the titration of the separated iodine; if, however, the titer is adjusted according to rhodanide and if the bromine-iodometric method is applied, more accurate results are obtained. The method was tested with artificially composed mixtures. (The analysis is described and tables of results are given). There are 2 tables, and 4 references, 1 of which is Slavio.

ASSOCIATION: Rostov State University and "Rostsel'mash" Plant (Rostovskiy gosudarstvennyy universitet i zavod "Rostsel'mash")

AVAILABLE: Library of Congress

Card 2/2

1. Iron metal sulfides-Thermal sulfonatition-Processes
2. Thiosulfide determination-Idometrical methods

AUTHOR: Bayev, F. K. SOV/32-24-10-15/70

TITLE: News in Brief (Korotkiye soobshcheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1213 - 1213 (USSR)

ABSTRACT: F.K.Bayev (Rostovskiy gosudarstvennyy universitet) (Rostov State University) worked out a method of determination for small quantities of polysulfide sulfur and free sulfur in tanks for the sulfidation of metals. The method described by Kurtenaker (Z. Inorg. Chem., 142, 115, 1925) served as its basis. The sample is heated in a 0,5 n sodium sulfite solution. Then the solution is increased to a certain volume with zinc acetate and investigated again. It is then titrated with a 0,05 n iodine solution. The duration of the analysis is 20 - 30 minutes. The method may be used for the determination of the polysulfide sulfur and free sulfur in the presence of greater quantities of thiosulfate (up to 70%) and thiocyanate (up to 30%).

Card 1/2

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

BAYEV, F.K.

Polarographic determination of lead and thallium impurities in zinc salts and zinc when both kinds are present. Uch. zap. RGU 40:163-172 '58. (MIRA 13:10)

(Lead--Analysis) (Thallium--Analysis)

BAYEV, F.K.

Bromide-chloride as the support for the polarographic determination of tin in the presence of interfering metals. Uch.zap. RGU 41: 135-144 '58. (MIRA 15:1)
(Tin--Analysis) (Polarography)

BAYEV, F.K.

Determination of small quantities of sulfides in the presence of other sulfur compounds. Uch.zap.RGU no.60:117-121 '59.
(MIRA 14:10)

(Sulfides)

BAYEV, F.K.

Determination of small quantities of sulfides in the presence of other sulfur compounds. Uch.zap.RGU no.60:117-121 '59.
(MIRA 14:10)

(Sulfides)

BAYEV, F.K.; KANEVSKAYA, L.V.

Photocolorimetric determination of sulfides in liquors for sulfidizing metals. Izv.vys.ucheb.zav.; khim.i khim.tekh. 2 no.6:843-845 '59. (MIRA 13:4)

1, Rostovskiy gosudarstvennyy universitet i Azovskiy zavod kuznechno-pressovogo oborudovaniya. Kafedra analiticheskoy khimii.
(Sulfides)

KOVALENKO, P.N., prof.; BAYEV, F.K., dotsent

"Course in qualitative chemical analysis" by IU. A. Kliachko, S. A. Shapiro. Reviewed by P.N. Kovalenko, F. K. Baev. Zav.lab. 27 no.1:125-126 '61. (MIRA 14:3)

(Chemistry, Analytical--Qualitative)
(Kliachko, IU.A.)(Shapiro, S.A.).

BAYEV, F.K.

"Precipitation chromatography" by K.M.Ol'shanova, V.D.Kopylova, N.M.Morozova. Reviewed by F.K.Baev. Zhur.anal.khim. 18 no.10: 1277-1278 O '63. (MIRA 16:12)

KOROTKINA, L.G.; BAYEV, F.K.

Determination of the exchange capacity of sulfonated cationites using acetates. Zhur. anal khim. 19 no.6:664-667 '64.
(MIRA 18:3)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.

ACCESSION NR

AUTHOR: Korotkina, L. G.; Bayev, F. K.

TITLE: The effect of certain factors on the equilibrium exchange capacity of cation exchange resins KU-1 and SBS-1

CITED SOURCE: Sb. Peredovyye metody khim. rekhard. i kontrolya proizva. Rostovna-Donu, Rostovsk. un-t, 1964, 319-321

TOPIC TAGS: exchange capacity, cation exchange resin, equilibrium exchange capa-

Card 1/2

L 3[illegible]21-65

ACCESSION NR AP[illegible]

solutions of sodium and barium chloride. These studies showed that an equilibrium [illegible]

SUB CODE [illegible]

Card 2/2

BAYEV, F.K.; KOVALENKO, P.N.

Determination of the capacity of substances for chromatographic separation by means of qualitative microanalysis. Zhur. anal. khim. 20 no.1:126-128 '65. (MIRA 18:3)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.

BAYEV, G.

KISELEV, A. (Zaporozh'ye); ABRAMOV, P. (Zaporozh'ye); BAYEV, G. (Zaporozh'ye); AGARKOV, V. (Zaporozh'ye); GOSTRYY, I. (Zaporozh'ye); MAYBORODA, I. (Zaporozh'ye); RUBANIK, I. (Zaporozh'ye); SMERDOV, A. (Zaporozh'ye); KHLIVENKO, V. (Zaporozh'ye); DOLGONOVSKIY, N. (Zaporozh'ye).

We support the patriotic initiative of the Muscovites; a letter from active members of mass defense work in Zaporozh'ye. Voen.znan.32 no.12:17 D '56. (MLRA 10:2)

1. Predsedatel' Dneprovskogo alyuminiyevogo zavodskogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Kiselev). 2. Chlen komiteta (for Abramov, Bayev). 3. Obshchestvennyye instruktory (for Agarkov, Gostryy, Mayboroda, Rubanik). 4. Aktivisty oboronno-massovoy raboty (for Smerdov, Khlivenko). 5. Sekretar' Dneprovskogo zavodskogo komiteta Leninskogo kommunisticheskogo soyuza molodezhi Ukrainy (for Dolgonovskiy).
(Military education)

BULGARIA / Cultivated Plants. Commercial. Oil Bearing. M-5
Sugar Bearing.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25143

Author : Bayev, Genchev
Inst : ~~Not given~~
Title : The Narrow-Row Sowing of Flax

Orig Pub: Selskostop. mis 1, 1957, 2, No 2, 100-102 (Bulg)

Abstract: No abstract.

Card 1/1

BAYEV, G.

Improve the reception and inspection conditions of cattle and poultry delivery. Miasn.ind. SSSR 33 no.3:24 '62. (MIRA 15:7)

1. Krasnodarskoye krayevoye upravleniye Gosudarstvennoy inspektsii po kachestvu sel'skokhozyaystvennkh produktov.
(Meat industry)

SUMIN, I.P.; ZOL'NIKOV, V.V.; BAYEV, G.G.; SHERSTNEV, D.M.; LITVIN, I.F.

Improving boring and blasting operations. Ugol' 39 no.12:32-35 D '64. (MIRA 18:2)

1. VzryvPEU Kombinata Kuzbassugol' (for Sumin, Zol'nikov, Bayev). 2. Trest Belovugol' (for Sherstnev). 3. Bachatskiy ugol'nyy kar'yev (for Litvin).

BAYEV, G.M., kand.veterin.nauk

Suggestions for the improvement of S.G.Meliksetian's magnetic probe.
Veterinariia 40 no.9:52-53 S '63. (MIRA 17:1)

1. Kirgizskiy sel'skokhozyaystvennyy institut.

L 4365-66 EWT(m)

ACC NR: AP5028424 SOURCE CODE: BU/0011/65/018/001/0051/0054

AUTHOR: Robev, S.; Bayev, I.; Bonev, L. 27 B

ORG: Scientific-Research Institute of Radiology and Radiation Hygiene, Sofia (Nauchno-issledovatel'skiy institut radiologii i radiatsionnoy gigiyeny)

TITLE: Distribution of N-(4-nitrophenyl)-benzo-C^{14}-amidine in organs of white rats when used for radiation protection

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 1, 1965, 51-54

TOPIC TAGS: mouse, rat, antiradiation drug, organic amide, radiation biologic effect

ABSTRACT: [Russian article] The study of the distribution within organisms of compounds exhibiting radiation protection properties is of great importance for the explanation of the particular protective mechanism. The authors' earlier studies of the radiation protection action of amide compounds on mice and rats (see, e.g., J. Baev, S. Robev, Compt. rend. Acad. bulg. Sci., 15, 1962, No 6, 613) uncovered essential differences between their protective actions and those of sulfhydryl radiation protectors of the cysteamine group. The present study concentrated on a detailed investigation of the distribution of N-(4-nitrophenyl)-benzoamidine and, in particular, its hydrochloride in white rats. Tabulated results show that the variations of the specific activity observed in organs of various animals exhibite

Card 1/2

L 4365-66

ACC NR: AP5028424

measurable fluctuations caused by individual responces of various organisms. These fluctuations prevent the establishment of any quantitative connections between the amount of incorporated labeled amidine found now and the amounts reported in earlier references. Nevertheless, new data support the assumption that the local amidine concentration has little relation to the appearance of the radiation protection effect. While the amidine distribution pattern is the same during the parenteral and internal introduction, the radiobiological effect is completely different. As reported earlier (Il. Bayev, Rentgenologiya i radiologiya, 1964), the peroral introduction fails to produce any radiation protection whatsoever. The work was presented by A. Spasov, Corresponding Member, 12 Aug 64. Orig. art. has: 1 table. [JPRS]

SUB CODE: LS / SUBM DATE: 12Aug64 / ORIG REF: 008 / OTH REF: 004
SOV REF: 002

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Card 2/2

BAYEV, I.A.

Negative resistance and the generation of oscillations in n-InSb point-contact diodes. Fiz. tver. tela 6 no.12:3747-3749 D '64 (MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, Moskva.

L 4417-66 EWT(1)/T/EWA(h)/EWA(c) IJP(c) GG/AT

ACCESSION NR: AP5022690 UR/0181/65/007/009/2585/2593

AUTHOR: Bayev, I. A.; Valyashko, Ye. G.

TITLE: Investigation of the distribution of the inhomogeneities in semiconductor crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2585-2593

TOPIC TAGS: semiconductor crystal, semiconductor research, crystal imperfection, photo conductivity, photo emf

ABSTRACT: This is a continuation of earlier work by the authors (FTT v. 7, 1729, 1964), in which a method is described for determining the distribution of inhomogeneities by measuring the volume-gradient photo emf produced in the semiconductor when its surface is illuminated by a traveling light spot. In the present article the authors describe a method of quantitatively calculating and experimentally determining the inhomogeneity content by measuring the gradient of the resistivity and the lifetime of the excess carriers. The formulas for the quantitative calculations are derived briefly, using the theory of V. Ye. Lashkarev and V. A. Romanov (Tr. Inst. fiz. UkrSSR v. 7, 50, 1956, and J. Tauc, Czechosl. Jour. Phys. v. 5, 178, 1955). The experimental setup is shown in Fig. 1 of the

Card 1/4

L 4417-66

ACCESSION NR: AP5022690

3

Enclosure. The measurements were made on n-Ge single crystals grown by the Czochralski method with impurity concentration 2.2×10^{13} cm^{-3}. When the investigated sample is illuminated by the traveling light spot, the oscillographic curves give the distribution of the inhomogeneities over the entire volume of the crystals simultaneously. The volume-gradient photo-emf curves give the distribution of the electrically active impurities, while the photoconductivity curves yield the lifetimes of the minority carriers. The resistivity gradient is determined from the amplitudes of the photoconductivity and volume-gradient photo-emf curves. The dependence of the lifetime on the concentration of the electrically active impurities is determined from the character of the photo emf distribution curves. The experimental results show that theory does not take into account some of the factors such as the internal fields produced when the electrically active impurities are unevenly distributed, and must therefore be treated with caution. The results show also that even when the electrically active impurities have a highly uneven concentration, the minority carrier lifetime may still be constant. An advantage of the method is higher sensitivity and shorter measurement time as compared with methods based on the measurements of the conductivity along the crystal. Orig. art. has: 3 figures, 9 formulas, and 1 table. [02]

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

Card 2/4 94.55

L 4417-66

ACCESSION NR: AP5022690

SUBMITTED: 19Aug64 ENCL: 01 SUB CODE: SS, OP

NO REF SOV: 003 OTHER: 005 ATD PRESS: 4126

Card 3/4

L 4417-66

ACCESSION NR: AP5022690

ENCLOSURE: 01

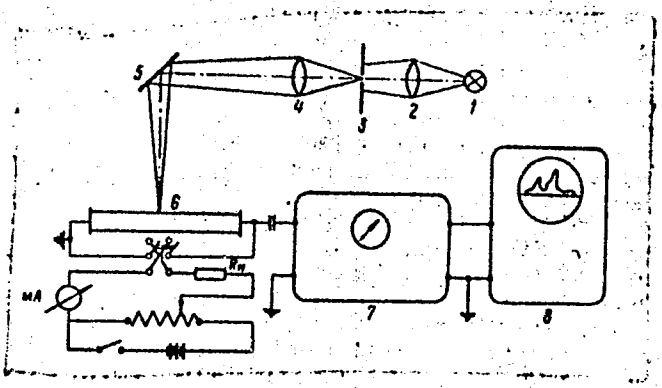


Fig. 1. Schematic diagram of the measuring setup

1 - Incandescent lamp; 2 - condenser; 3 - slit; 4 - objective; 5 - rotating flat mirror; 6 - sample; 7 - broadband amplifier; 8 - oscilloscope.

Card 4/4

L 4416-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5022691 UR/0181/65/007/009/2594/2596

45
41
13

AUTHOR: Bayev, I. A.

55

TITLE: Negative resistance and generation of oscillations with p-InSb point-contact diodes

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2594-2596

TOPIC TAGS: indium alloy, antimonide, volt ampere characteristic, semiconductor diode

55, 27

ABSTRACT: This investigation is similar to an earlier one by the author (FTT v. 6, 3747, 1964) of n-InSb point-contact diodes. The samples were made in the form of ten rectangular plates from single-crystal p-InSb in a direction perpendicular to < 111 >. The hole density was $\sim 10^{13}$ cm^{-3} and the hole mobility was ~ 2500 cm^2/v-sec. The samples were submerged in liquid nitrogen, and a fixed bias was applied to the collector through a load resistance. The voltage-current characteristics displayed regions of negative resistance and the associated generation of oscillations, which occurred only at certain critical values of the current and voltages. Variation of the current within the range of the critical values left the oscillation

Card 1/2

L 4416-66

ACCESSION NR: AP5022691

4

stable, caused their frequency to vary, but left the amplitude practically constant. A slow increase in the current made it possible for the oscillations to appear and disappear successively in all sections. Illumination focused on the point contact did not affect the characteristics, but affected the oscillations sensitive to the magnetic field. With increasing magnetic field intensity, the amplitudes decreased and the frequency increased slowly. The amplitude varied more strongly in weak fields and the frequency, in strong fields. The existence of negative-resistance sections on the voltage-current characteristics is attributed to the formation of oxide layers on the surface of the crystal. "The author thanks Ye. G. Valyashko for continuous interest in the work and valuable remarks." Orig. art. has: 2 figures. [02]

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 07Dec64 ENCL: 00 SUB CODE: SS, EC

NO REF SOV: 001 OTHER: 001 ATD PRESS: 4120

Card 2/2

L 16125-65 ESD(t)/ESD(gs)/SSD/AFWL/ASD(a)-5/RAEM(a)

ACCESSION NR: AP5000696 S/0181/64/006/012/3747/3749

AUTHOR: Bayev, I. A.

B

TITLE: Negative resistance and generation of oscillations by n-InSb point contact diodes

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3747-3749

TOPIC TAGS: semiconductor diode, indium antimonide, negative resistance, self oscillation, pn junction

ABSTRACT: The phenomenon investigated is similar to that observed by others in point contact p-n junctions of n-Si and p-Ge. The n-InSb diodes were made of thin slabs cut from single crystals with concentrations from 7.8×10^{13} to 1.2×10^{15} cm^{-3}. All measurements were made at liquid-nitrogen temperature, but self-oscillation was observed also at higher temperatures. All diodes exhibited on the reverse branch of the current-voltage characteristic two regions of

Card 1/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204020017-5"

L 16125-65

ACCESSION NR: AP5000696

negative resistance, where the oscillations occurred. Some diodes had negative-resistance regions on the forward branch, too, but the oscillations were more difficult to excite there. The oscillation effect varied with the inverse current and the frequency, and also was sensitive to application of an external magnetic field. Typical oscillograms are shown and some of the peculiarities of the phenomenon are described. The author ascribes the negative-resistance branches to the formation of definite states on the surface of the crystal. "The author thanks Ye. G. Valyashko for continuous interest in the work and for many valuable remarks." Orig. art. has: 2 figures.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 22Jul64 ENCL: 00

SUB CODE: SS, EM NR REF SOV: 000 OTHER: 003

Card 2/2

ACCESSION NR: AP4039661 S/0181/64/006/006/1729/1734

AUTHORS: Bayev, I. A.; Valyashko, Ye. G.

TITLE: A study of the nonuniformity of semiconductor crystals with the help of a scanning light probe

SOURCE: Fizika tverdogo tela, v. 6, no. 6, 1964, 1729-1734

TOPIC TAGS: semiconductor, light probe, photo emf, impurity content, resistance, grain boundary, concentration gradient, n germanium, p germanium, n indium stibnite

ABSTRACT: The magnitude of the photo emf in a semiconductor is proportional only to the gradient of the impurity concentration in the illuminated portions and is independent of the specific resistance of the specimen. The previously used emf measuring method based on moving the specimen through a narrow beam of light was improved upon by fixing the specimen and traversing the light beam. The resulting oscilloscope curve was more informative because the entire sample surface was scanned instead of only its selected points. This method has a high sensitivity for detecting semiconductor nonuniformities. Figure 1 on the Enclosure shows the experimental arrangement by which the light from a 200-500 watt incandescent lamp

Card 1/4

ACCESSION NR: AP4039661

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 02Jan64 ENCL: 01

SUB CODE: GS NO REF SOV: 003 OTHER: 006

Card 3/4

ACCESSION NR: AP4039661

ENCLOSURE: 01

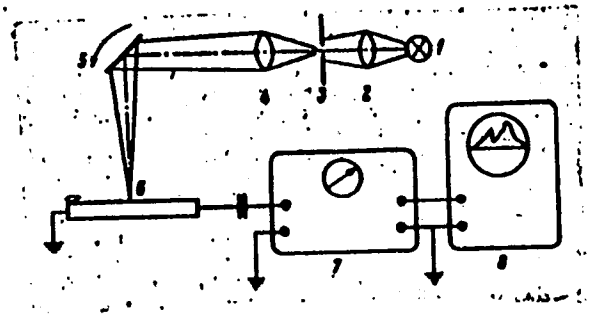


Fig. 1. Principal scheme of arrangement: 1- light source; 2- condenser; 3- aperture; 4- objective; 5- rotating mirror; 6- specimen; 7- broad band amplifier; 8- oscilloscope.

Card 4/4

ACCESSION NR: AP4011766 S/0181/64/006/001/0272/0278

AUTHOR: [redacted]

TITLE: Measurement of lifetime and diffusion coefficient of minority current carriers in InSb by the method of a moving light spot

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 272-278

TOPIC TAGS: lifetime, diffusion coefficient, minority carrier, minority current carrier, current carrier lifetime, light spot, InSb, n type InSb, p type InSb, single crystal, monocrystal, reflection optics, donor concentration, acceptor concentration, infrared light, surface recombination

ABSTRACT: The principle of measuring by a moving light spot differs little from the principle for a fixed spot, but it permits one to determine simultaneously the lifetime of carriers, their diffusion coefficient, and the rate of surface recombination. It also permits the parameters to be measured independently of each other. In the present work, results are published for such measurements on single crystals of both p-type and n-type InSb. The method was first proposed by G. Adam (Physica, 20, 1937, 1954) for measurements on Ge. In order to maintain sharpness of focusing the edge of the spot in the infrared region, reflection optics were

Card: 1/2

ACCESSION NR: AP4011766

employed. Diffusion coefficients for electrons were found to be 1700-2500 cm^2/sec in p-type samples with acceptor concentrations of $9.5 \cdot 10^{13}$ to $2.0 \cdot 10^{15}$ cm^{-3}, and for holes 60-130 cm^2/sec in n-type samples with donor concentrations of $5.7 \cdot 10^{13}$ to $4.2 \cdot 10^{14}$ cm^{-3}. The lifetime for these samples ranged from $7 \cdot 10^{-7}$ to $2.9 \cdot 10^{-6}$ sec for n-type InSb and from $8 \cdot 10^{-7}$ to $3 \cdot 10^{-8}$ for p-type material. The author has shown that the lifetime and diffusion coefficient do not depend on the width or rate of movement of the light spot. "In conclusion, the author expresses his sincere thanks to Ye. G. Valyashko for valuable suggestions and for his constant interest in the work." Orig. art. has: 4 figures, 1 table, and 8 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 07Mar63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 005 OTHER: 006

Card 2/2

ACC NR: AP7002680 SOURCE CODE: UR/0109/67/012/001/0161/0163

AUTHOR: Bayev, I. A.

ORG: Physics Faculty, Moscow State University im. M. V. Lomanosov (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Generation of oscillations by point-contact p-PbS diodes

SOURCE: Radiotekhnika i elektronika, v. 12, no. 1, 1967, 161-163

TOPIC TAGS: semiconductor diode, electronic oscillator

ABSTRACT: Oscillations were observed when bias was applied across sample p-PbS point-contact diodes. The specific resistivity of the p-PbS crystals was reduced to 0.07—0.01 ohm/cm by heating the crystals for several hours at a temperature of 400C in a cerium vapor medium. The crystals were then oxidized in air at a temperature of 500C. Point-contact diodes prepared in such a manner had forward resistances from 200 to 1000 ohm and reverse resistances from 0.01 to 0.3 Mohm. Oscillations at frequencies of 77, 62.5, and 57.5 kc with maximum amplitudes of 0.5, 0.37, and 0.22 v respectively, were observed across the prepared samples. The oscillations occurred at reverse bias voltages from 18 to 29 v and reverse currents from 200 to 800 μamp. Oscillation at a frequency of 300 kc with an amplitude of 0.3 v was observed across a sample with a

Card 1/2 UDC: 621.373.5

ACC NR: AP7002680

specific resistivity of 0.0095 ohm/cm at a reverse voltage and current of 7.5 v 46 μamp. The nature and frequency of the oscillations at room temperature were determined by the diode parameters and were completely independent of the outside circuit elements. Orig. art. has: 2 figures.

SUB CODE: 09/ SUBM DATE: 06Apr66/ ORIG REF: 002/ OTH REF: 001/
ATD PRESS: 5112

Card 2/2

BAYEV, I.A.; VOLYASHKO, Ye.G.

Study on the distribution of inhomogeneities in semiconductor crystals. Fiz. tver. tela 7 no.9:2585-2593 S '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

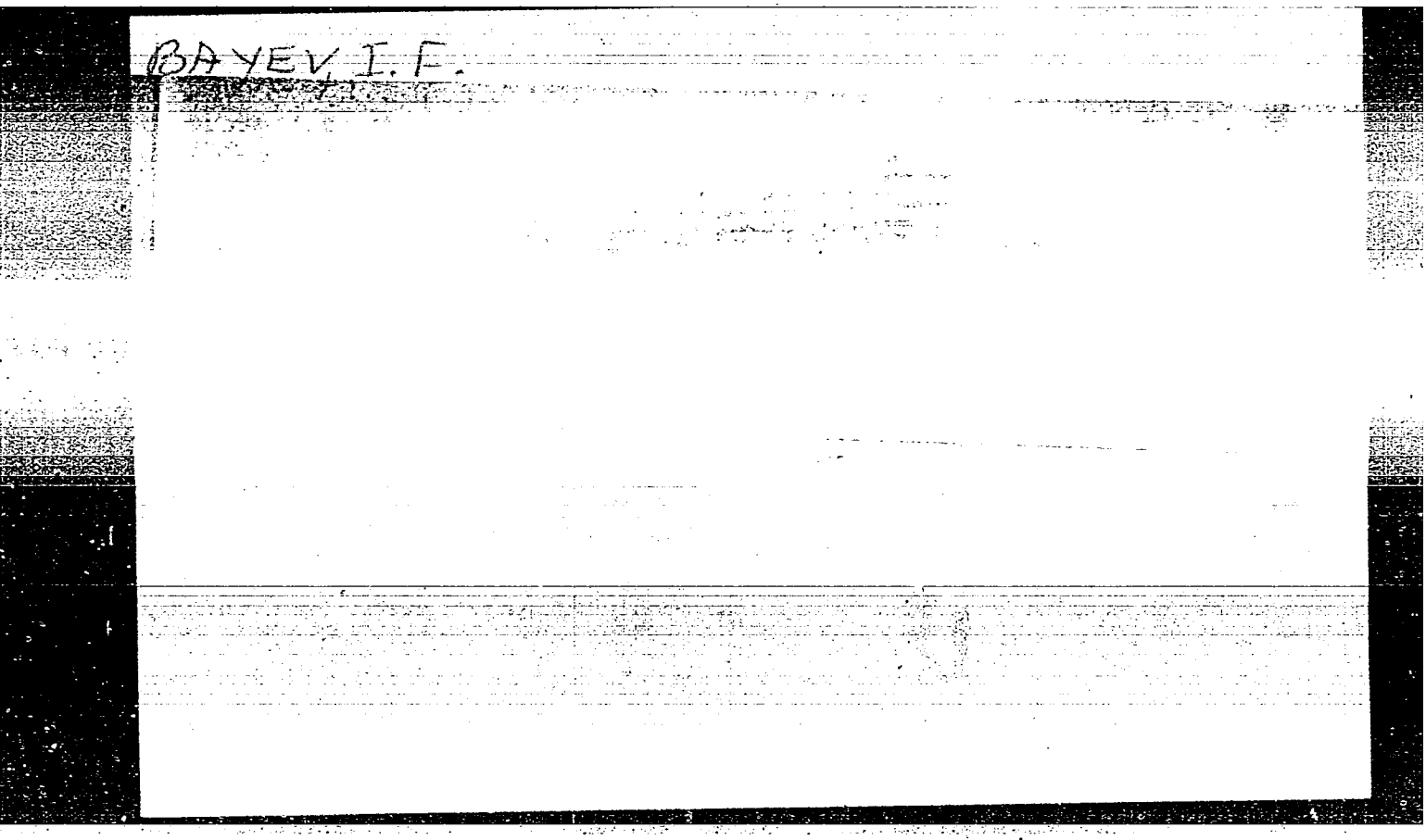
L.Y-V, I.P.

Negative resistance and generation of oscillations at point contacts in InSb. Fiz. tver. tela 7 no.9:2594-2596 S '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

BAYEV, I.F., mayor meditsinskoy sluzhby

Two cases of intestinal infarct. Voen.-med.zhur. no.9:85-87 S '51.
(INTESTINES--INFARCTION) (MIRA 9:9)



79-28-5-37/69

AUTHORS: Zavgorodniy, S. V., Sigov, O. V., Bayev, I. F.

TITLE: Synthesis of 1,4-Diisopropylbenzene and Some of its Conversions (Sintez 1,4-diizopropilbenzola i nekotoryye yego prevrashcheniya)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1279 - 1284 (USSR)

ABSTRACT: In the present work the alkylation of the isopropylbenzene with propylene in the presence of BF_3. H_3PO_4 was dealt with. When using these three compounds at equimolar ratios (4 : 1 : 0,26) at 98 - 100°C the 1,4-diisopropylbenzene was obtained in a yield of 73% (at 52 to 55°C - 19%). The oxidation of the 1,4-diisopropylbenzene (in liquid phase) with atmospheric oxygen in the presence of various stimulators in mono- and dihydrogen peroxide was investigated. During some time of this oxidation an accumulation of peroxide to a certain maximum takes place, on which the decomposition begins and the amount decreases. At 110°C such a maximum is reached after 12-14 hours,

Card 1/3

Synthesis of 1,4-Diisopropylbenzene and Some of its Conversions

at 85°C after 20-40 hours, depending on the stimulators. The stimulator mixture, consisting of manganese resinate and cobalt acetate with an addition of calcium hydrogen peroxide stimulates oxidation much more than the first two, taken singly. The addition of sodium stearate to the mixture accelerates the oxidation and makes it possible to obtain 51% hydrogen-peroxide at 85°C during 17 hours, whereas without stearate only 33% result at 110°C during 16 hours, on which the decomposition of the peroxide starts. Calcium-hydrogen-peroxide also accelerates the oxidation and strengthens the hydrogenperoxide which leads to a deeper oxidation. The oxidation is mainly directed to the formation of monohydrogen peroxide of the diisopropylbenzene in the cleavage of which in acidous medium the 4-isopropylphenol forms in a yield of 90%. Partially also dihydrogen peroxide of the diisopropylbenzene forms which then splits into hydroquinone. There are 2 figures, 1 table

79-28-5-37/69

Synthesis of 1,4-Diisopropylbenzene and Some of its Conversions

and 5 references, 4 of which are Soviet.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: April 8, 1957

Card 3/3

Bayev, I. F.

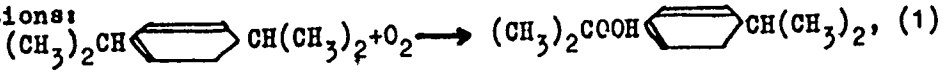
20-2-28/60

AUTHORS: Topchiyev, A. V., Academician, Bayev, I. F., Morozov, L. A.

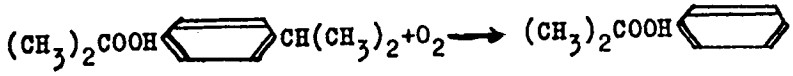
TITLE: The Synthesis of the Mono- and Di-Hydroperoxide of p-Diisopropyl-Benzene (Sintez mono- i digidroperekisi p-diizopropilbenzola)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 306 - 308 (USSR)

ABSTRACT: The industrial methods of the production of alkyl benzenes do not always lead to an alkylate suitable for oxidation in the liquid phase. Thereby the structure of the large enterprises was determined by the technology of the synthesis of isopropylbenzene from benzene and propylene in the presence of aluminum-chloride as catalyst. This first of all guaranteed the common industrial production of phenol and acetone (reference 1). An earlier paper reported that the oxidation of alkylbenzenes in the liquid phase which were produced by the alkylation of benzene by means of olefins in the presence of boron fluoride (reference 2) is also studied (reference 3). The oxidation in the liquid phase takes place according to the equations:



(1)



(2).

Card 1/3

The Synthesis of the Mono- and Di-Hydroperoxide of p-Diisopropyl-Benzene

stance with a 99,8% content of the basic substance. It decomposes on melting. The constants of both peroxides are given. Thus p-diisopropylbenzene forming beside isopropylbenzene represents a good initial substance for the production of the di-hydroperoxide of p-diisopropylbenzene. There are 1 figure, 2 tables, and 4 references, 3 of which are Slavic.

SUBMITTED: May 3, 1957

AVAILABLE: Library of Congress

Card 3/3

BAYEV, I. F.

11(2,4) PHASE I BOOK EXPLOITATION SOV/2536

Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti.

Problemy nefti i gaza (Oil and Gas Problems) Moscow, Gostoptekhizdat, 1959. 362 p. (Series: Its: Trudy, vyp 24) Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Exec. Ed.: G. F. Morgunova; Tech. Ed.: I. G. Fedotova; Editorial Board: K. F. Zhigach, Professor (Resp. Ed.), I. M. Murav'yev, Professor, A. A. Tikhomirov, Candidate of Economic Sciences, V. N. Vinogradov, Candidate of Technical Sciences, M. M. Charygin, Professor, F. F. Dunayev, Professor, I. A. Charnyy, Professor, V. N. Dakhnov, Professor, G. M. Panchenkov, Professor,

PURPOSE: This collection of articles is intended for specialists in the petroleum and gas industry. It will also be of interest to scientific research institutes, teachers and students of vuzes.

COVERAGE: This collection of articles reviews problems connected with natural and synthetic gas production. A number of articles are devoted to the study of regional oil- and gas-bearing zones, the crystalline beds underlying the Volga-Urals petroliferous region, tectonics of the Caspian depression, seismic prospecting, oil well logging, development of oil and gas fields, petroleum-bearing formations and their physicochemical characteristics, and petroleum engineering. Other articles deal with gas turbine engines and their possible use in the oil and gas industry, the production of carboxymethylcellulose compounds, the application of ionic exchange tars to the organic catalysis, continuous coking of heavy petroleum residues, (fluidisation), the improvement of lube oil production, and the influence of acid esters on properties of lubricating oil and grease. The book contains a number of photographs, tables, flow sheets, and diagrams, among which those relating to coal gasification and conversion of heavy petroleum residues over a fluidized bed catalyst deserve special attention. References accompany individual articles.

3/2

TOPCHIYEV, A.V.; PAUSHKIN, Ya.M.; BAYEV, I.P.; KURASHEV, M.V.; SHULESHOV, O.I.

Present status of the synthesis of benzene homologs and their chemical processing. Trudy MINKHiGP no.24:269-285 '59.
(MIRA 13:3)

(Benzene)

8(2)

S/143/60/000/02/007/018
D043/D002

AUTHORS: Renne, V.T., Doctor of Technical Sciences, Professor, Morozov, L.A., Proskurnin, V.P., Bayev, I.F.

TITLE: A New Insulating Liquid Made of Waste of the Phenol and Acetone Production for Capacitor Impregnation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika, 1960, Nr 2, pp 51-60 (USSR)

ABSTRACT: The new insulating liquid for impregnating power current capacitors is a mixture of 1, 1.3-trimethyl--3-phenylindan chlorides and ethyl benzene. It has all the advantages of pentachlordiphenyl, but is considerable cheaper. Isopropyl-benzene-α-methyl-styrene with a catalyst ($H_3PO_4 \cdot BF_3$) is used as raw-material for producing trimethylphenylindan poly-chlorides. The suitability of the new dielectric for impregnating capacitors was established in

Card 1/3

S/143/60/000/02/007/018
D043/D002

A New Insulating Liquid Made of Waste of the Phenol and Acetone Production for Capacitor Impregnation

preliminary experiments, but additional studies are required. With a certain ratio of the mixture components, the solidification point will be at -35 to -40°C. Good ionization characteristics of capacitor models impregnated with the new dielectric were obtained, thus the capacitors may be subjected to considerable overvoltages during their operation. The production process of the new dielectric is uncomplicated, thus the cost for mass-produced power current capacitors will be reduced compared to those filled with pentachlordiphenyl. Experimental work for obtaining the new dielectric is described. The properties of polychlorides of trimethylphenyl indan, ethyl benzene and their mixture are given. Some differences in the $tg\delta$ values were caused by the measuring methods used

Card 2/3

S/143/60/000/02/007/018
D043/D002

A New Insulating Liquid Made of Waste of the Phenol and Acetone Production for Capacitor Impregnation

at the "Kondensator" plant and lacking perfection of purification methods. The characteristics of capacitor paper specimen impregnated with the new dielectric are also given. Capacitance changes of the KON-I and of the KON-II paper specimens did not exceed 8-9% in the temperature range from -20 to +90°C. There are 3 graphs, 1 block diagram, 5 tables and 5 references, 2 of which are Soviet, 2 English and 1 German.

ASSOCIATION: Leningradskiy politekhnicheskiy institut imeni M.I. Kalinina (Leningrad Polytechnic Institute imeni M.I. Kalinin)

SUBMITTED: October 9, 1959, by the Kafedra elektroizolyatsionnoy i kabel'ney tekhniki (Department of Electrical Insulation and Cable Engineering)

Card 3/3

PROSKURNIN, V.P., inzh.; PERESELENTSEV, I.F., inzh.; BAYEV, I.F., inzh.; IVANNIKOV, P.N., inzh.

Study of the characteristics of paper condensers staturated with chlorinated liquids. Elektrotekhnika 36 no.8:18-21 Ag '64. (MIRA 17:9)

Radiology

BULGARIA

ROBEV, St., BAYEV, Il., PANOV, N., Institute of Radiology and Radiation Hygiene, Sofia-Darvenitsa

"Radiation Protection Effect of Certain Isothiuronium-S-Propio-NN'-Diaryl Amidins"

Sofia, Doklady Bolgarskoy Akademii Nauk, Vol 19, No 12, 1966, pp 1143-1145

Abstract: [Russian article] The authors showed recently (see, e.g., St. Robev, S. Todorov, Dokl. AN SSSR, 132, 1960, 1201; I. Bayev, St. Robev, Dokl. BAN, 15, 1962, 613) the irradiation protection properties of aromatic N-aryl substituted amidines. The present paper outlines the results of radiation protection properties of certain newly synthesized β-isothiuronium-S'-propio-NN'-diaryl amidines in two lines of mice exhibiting differing radiation sensitivity. Tables show the results of toxicity tests carried out on 165 animals and radiation protection capability investigation carried out on 425 animals. Data are compared with those from parallel tests on control and cysteamine-protected animals. References: 6 Bulgarian, 2 Soviet, and 1 Western. (Manuscript received, 27 Jul 1966.)

1/1